



## Developing a compact and portable BioPhotonics Workstation

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# Developing a compact and portable BioPhotonics Workstation

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We will outline the specifications of a portable Biophotonics Workstation we recently have developed that utilizes high-speed spatial light modulation to generate an array of rapidly reconfigurable laser-traps making 3D real-time optical manipulation of advanced structures possible with the use of joysticks or gaming devices. The fabrication of microstructures with nanometer-sized features, for example a nano-needle, coupled with the real-time user-interactive optical control allows a user to robotically actuate appended nanostructures depending on their intended function. These micro-platforms carrying nanotools are seen to have potential uses in a variety of micro-biological experiments. Optically actuated nanoneedles may be functionalized or directly used to approach and probe cells at specific locations or even to assist the separation of dividing cells, among a host of other functions useful in dynamic interaction with biological microenvironments.

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